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Preliminary Remarks.

In selecting a subject as the basis of a disputation, no small difficulty arises in the mind of the writer as to the one most suitable to such an undertaking; and also one upon which he is most likely to produce an essay worthy of attention. Therefore every candidate should duly consider the subject upon which he is about to offer his remarks, and ascertain by such reflections in the first place whether or not he be adequate to the task. —

In doing this I find none more worthy of attention; and likewise none upon which I find myself more equal to, than that accident so frequently occurring, which is known by the name of a Burn, to which in many cases surgical aid is essentially necessary. —

The treatment of Burns, has not been particularly attended to by any surgical writer; except Mr. Hertsh, and I believe those who had spoken of the effects of fire upon the human body previous to him had no just conception of the nature and treatment of such accidents. His having paid more particular attention to Burns in general is no doubt the reason why he has thrown more light upon the subject than any of his predecessors.

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loude men in general confine their efforts to a few points, Science would make a more rapid progress; then there might be less brilliancy attached to individuality; for it is by a division of labours, that perfection is to be attained in the Scientific as, well as in the Mechanic Arts. And were we truly to appreciate the matter we should be convinced that there is more credit in elucidating one uncertain point in the practice of Medicine or Surgery; than in loading many clear ones, with a farago, which by the unexplained cannot be distinguished, and of which the bad is as likely to be chosen as the good; and thus would error become perpetual. - And I am sorry to add, that this is too frequently the case. - Pandow this digression from the Subject.

Having heretofore observed that Mr Hertshus appears to have had the best notions concerning Burns; it must not be inferred, that I would absit him; to be altogether free from error: far from it, for in some instances, he appears to carry his Theory too far, and by that means has done more harm than good. -

In the Composition of the following sheet, I am not certain that any thing either new or interesting will be Said, upon a Subject, which many Modern Surgeons have bestowed considerable attention upon. -

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However as it is a duty incumbent upon every candidate for a Musical degree, by a law of this honourable institution: I shall proceed upon the detail of my remarks, without saying as is generally if not always done by the writer, excuse my inadequacy - The short time allowed me in the preparation of the following Sheets - My juvenile mind &c - with many other instances of the like, in all amounting to self-praise, indirectly applied, which is disgusting to a mere reader. And I ask how does it appear to professors in the University of Pennsylvania? . — —

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Burns. —

A Burn may be defined; an injury occasioned by the application of heat so far applied, to the natural temperature of the body; as not to be ~~burnt~~ without the fibres or organization of the part being hurt. —

Burns have been divided by writers, in many ways, but I shall not adopt their divisions in this essay; but speak of them as they are more or less influenced by the following five Circumstances, viz.—
 1° The Intensity of heat applied. 2° The nature of the part affected. 3° The nature and peculiarity of the body producing the injury. 4° The length of time it is kept in contact. 5° The extent of Surface. —

It is necessary that these should be particularly attended to; I lay them down as so many primary propositions, and they appear more or less in all Burns. There are some others such as age &c. which however are of minor consequence. —

Dr. Physick has divided Burns, into three grades; which I shall include under the first head that was noticed above; each influential circumstance related above will be distinctly spoken of — a few observations on the nature & peculiarity of the inflammation attending Burns.

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burns; and lastly, the treatment that is most
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1st. Intensity of heat applied. under this
I include 1st sebum or inflammation of the surface
skin. 2^d blisters & c. formed causing a separation of
the cuticle under which serum is offered. - 3rd. The
common death of the part forming an eschar
which that which is produced by Carbolic acid takes
place where the heat has been intense, the two for-
mer giving less degrees of it. When the part is es-
charized the patient does not feel great pain
till after 3 or 4 days when the process of sloughing
takes place, see the inflammation arising from
the separation of the dead part from the living
is great and the pain very distressing. -

In confirmation of this, Dr. Physick relates
a case of a boy, who fell into a kettle of boiling
water in a Soap-Manufactory and when
interrogated concerning his feelings he answered
that he felt no pain; here the heat was kept
up till so long as to destroy all sensations.
In these cases, the symptoms arising are less
alarming; such as collapse of the extremities,
coma, and restlessness which generally terminate
fatal. - - -

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2. The Nature of the part affected.

This has a great influence over all Burns, and should be particularly attended to. Burns are most dangerous where situated upon the head, and over large joints; in the former they sometimes occasion inflammations of the dura-mater and thus disturbing the functions of the brain; produce violent symptoms as pain, delirium, coma, syncope and not unfrequently death. And in the latter hectic fever, with all its horrors, arising out of the life of the patient is so much endanger'd as to render amputation indispensably necessary for his recovery. While, on the contrary, when seated upon the trunk of the body, or either of the extremities, such symptoms very seldom, if ever, occur (all other circumstances being alike); and the cure, at the same time, is more easily accomplished. —

3. The nature and peculiarity of the body introducing the injury. — Under this head comes ~~comes~~ scales, which are one of the nature of Burns, except in the body that produces the injury; Scales are not so alarming as injuries produced by many other substances, for this obvious reason, that burns are

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not capable of receiving so high a temperature. —
as Metals, and some other hard substances. —

Great heat can very serious Burns in their initiation, or after a time which at first appeared of no consequence, for frequently the Skin and Muscles rough off and leave the bone bare; Necter goes easier, and life is destroyed. —

Burns occurring in the different Manufactories, of Europe, whence some poisonous Metal is carried, such as Arsenic and the like are most undoubtedly more dangerous in their tendency than Burns occasioned by a common Metal heated to the same degree; however such Burns rarely if ever occur in the United States, for they do not demand our immediate attention. —

Burns from explosions of gun-powder are not infrequently productive of serious consequences, in such cases most commonly the grains of powder are forced into the surface of the injury which must necessarily produce some degree of irritation; they are advised in all cases to be extracted: but this would be a very injudicious practice for certainly if the particles where numerous the irritation produced by an attempt to extract them would far exceed that of their being left in the part, — therefore

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Therefore they should only be extracted where situated ⁸
upon the face and hands, in which place they would
tend to produce deformity, and even in this case
they are frequently brought away with the drop-
ings, so that it is hardly if ever necessary to follow
the advice of the other Surgeons, unless it can be
done with very little force.

4th The length of time it is kept in Contact.
This materially influences the nature of Burns,
for instance; bodies possessing an intense degree
of heat, if not kept long in Contact, do not cause
Burns of so alarming a nature as degrees of
heat somewhat insipid kept applied for a con-
siderable length of time. This I assume as a
fact and it has, I believe been fully established
by the observations of Many Surgeons. —

5th The extent of Surface.

It is particularly
worthy of remark that the danger arising
from the effects of fire is more proportionate
to the extent of the injury than the depth.—
As a Burn that is so violent as to kill the part
immediately may not be in the least dangerous
if not extensive; while a Burn that is not deep,
but ^{very} extensive may prove mortal.

This circumstance Dr. Physick makes parti-
cular mention of, in his course of invaluable
lectures.

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Burns affect old people more than young; tho' at times they prove fatal at all ages; they are very dangerous, in persons, of tropical habits, owing to their tendency to mortification: also in persons, whose constitutions have suffered much from previous, or existing, ^{disease}, as scrophulet.

To conclude these remarks on the nature of Burns, it must be observed, that the danger is to be rated according as a greater or less number of the circumstances before mentioned are present at the time of the injury. —

of The Nature of Inflammations from Burns.

That the inflammation from Burns is different from all other inflammation, risips from the following facts.

1^o. The pain is entirely different from that attending the other kind; it being of a burning nature and infinitely more distressing to the patient who suffers it. —

2^o. It may be inferred from its having no disposition to resolve; and its having on leaving ulceration of the parts beneath which throw up fungous granulations ~~and~~ ^{which} are very hard to supppre. —

3^o. The cicatrices formed by ulcers resulting from Burns have a greater disposition to contract than other inflammation and causing thereby those from

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4th. It is rendered evident from the mode of cure being entirely different, as Stimulants in inflammation from Burns being used with the effect of producing a cure; while the Antiphlogistic plan is pursued in other inflammation with success: And where either method of treatment reversed it would prove highly injurious, and ultimately very dangerous. —

5th. It may be inferred from the inflammation in Burns taking place instantaneous; while that from other causes, as Cold &c, does not, for in many instances a considerable time elapses.

6th. I infer it from the cause itself being totally different; for certainly it will not be said that there is any resemblance between heat and cold or Mechanical violence.

7th. And lastly, it is ~~more probably~~; from the circulation in inflammation from Burns being slower while that otherwise induced is accelerated. This is my own opinion, I would not assert tho' that the circulation in any inflamed part is slower because I do not think that it can be satisfactorily proved; but merely mention ~~it~~ ^{this, in} order to explain the ~~the~~ action of Stimulants.

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of Stimulants in producing a cure, cannot be ^{!!}
explained neither will it admit of any problema-
tical reasoning. —

Let it not be understood that I mean in all
degrees of heat that this is applicable to; far from
it: but only in such as are of a higher degree, and
go to derange the organization of the part in some
measure. —

I might go on, and swell this essay far beyond
the limits, which I had intended, and give much
reasoning in proof of the difference between
the two Inflammations; but this I deem sufficient.

The seventh and last fact (if it be one) alone,
in my mind, goes to substantiate it sufficiently,
were I destitute of all others. —

Treatment of Burns. The treat-
ment of Burns necessarily resolves itself into two
kinds: viz Constitutional and local. —

The former place of treating Burns was
founded upon principles, which suited applicable
to cases of inflammation ⁱⁿ general; It was most
commonly Antiphlogistic and even copious
bleeding from the arm was not infrequently
practiced and it appears to me from what
I have seen in Books upon the Subject — that

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that cold and hot, irritating and soothing,
Astringent and emollient Applications have all
been outwardly employed, in cases of Burns with-
out much discrimination; and in many cases
to the no small injury of the patient. —

The plan of treating Burns has been
so various, and such a multiplicity of applications,
recommended by the different writers upon it,^{has given} next
to an impossibility to give a precise and regular
Account of it. Therefore, I shall place my rem-
edies and ~~and~~ remarks as they occur to me,
not pursuing any Methodical Arrangement. —

If the heat applied to a part induces inflam-
ation of Surface only; without incisions or the
complete death of it, the remedies to be employed
are the following: Cold water, or rather Ice if
it can be procured; the this application was not
first brought into use by Mr. Earle (it having
been long used before he published upon the
Subject), yet from his having more particularly
recommended it, and also from his exclusively
advising the use of it, he has certainly a consi-
derable claim to our praise. —

He has brought forward several cases of extensive
and dangerous Burns, in which it was employed
with the happiest effects; he observes that if the
part is so situated as to be plunged into the

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the cold-water, it should be done. If not, sage ¹³ dipped in it should be applied over the whole surface and renewed as often as it acquires warmth from the part. It must be continued as long as heat and pain remain, which in many cases is for a considerable length of time. —

If it should produce trembling and chills, be advised, it to be discontinued, and resort to other remedies; but these effects I believe, continue, he, seldom occurs. —

Another remedy very highly recommended in Burns, and which I believe to be more efficacious than the one last described, is the application of vinegar, so much recommended by W^t Cleghorn. It should be continued, says this gentleman, till the pain is abated and the redness somewhat lepined, taking great care, in cold weather, to warm it a little, the part injured may be either thrust into it, or sage may be wet and applied in the same manner as recommended when speaking of cold-water. —

After this, I might mention Sulphuric acid: it has been recommended as a substitute for vinegar, but should never, I believe, be used where other ~~the~~ remedies can be had accept.

In reading Mr B. Bell some time since, I observed that he recommended plunging the

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the injured part into boiling water suddenly,¹⁴
to procure ease as he supposed it would; but this
is a recommendation highly dangerous and not
likely to be imitated; at least not at this ad-
vanced period of Medical Science. —

In some cases emollients have
afforded immediate relief; but, in general, astrin-
gent applications are best. Such as Brandy or
Alcohol; the part should be immersed if convenient,
if not old linen rags wet in the liquor should
be kept constantly on the burnt surface;
Satinine Solutions, as that of Gouland's extract
and Saccharum Sativum, have been much spo-
ken of; also a strong solution of Alum, but if
escharotic of Surface is present, all kinds of lead
applications should be avoided for reasons obvious,
which shall be more particularly spoken of in
another place; a strong solution of Alum is pro-
bably the best Astringent we are acquainted
with; beside this as remedies employed in
Burrs are used by the common people; Scap-
-potatoes, Turnips, Molasses, and moist & cold
earth: This last, I conceive, might be efficacious,
Supplying, in some measure, the action of Ice
or Cold, in any shape. —

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What has been said on the Treatment of Burns
is applicable to the first stage or that which takes
place before Blisters arise; but is of small con-
sequence in Burns of any Considerable extent. —

If inflammatory Symptoms Should run high.
evacuating remedies should be had recourse to,
such as blood-letting, purging, or rather injections;
for this reason, that purges weaken the patient
more; and it is also very inconvenient to those
labouring under a Burn of some extent to be
getting up and going to stool. —

Blistering should be employed, low diet, & rest,
but if on the contrary the inflammatory Symptoms
are inconsiderable and there should be fever and
great weakness from irritation; prescribe Land-
anum, wine-whey, nourishing diet, cordials, Bask,
Bitter, &c. These last are constitutional remedies
to say a great deal in a few words, the constitutional
treatment must be accommodated to the state
of the System, and like it very considerably. —

Where the burnt part is, from the first,
attended with blisters upon the Surface, or where
more or less destroyed by the Calorific action, cooling
emollient Applications where formerly thought
as most effectual, and a liniment composed
of equal parts of lime-water and linseed-oil-
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gained the greatest celebrity, and even at this
day it is much used, and I believe it is appli-
cable to certain Bursa; It should be put on
when used with a camel-hair brush for the
application and removal of the slightest des-
-sing, often give pain and increase irritation
considerably. Beware, as I have said before,
of any late applications, for the most super-
ficial observer will perceive that this is a
very dangerous and highly precarious practice,
for it would (if continued any considerable
time) be taken up by the absorbents and car-
ried into the system, and a production of
Calicachictonus would be the consequence.
The same remarks are applicable to an oint-
ment, sometimes used, made of Thamnus
and lead, which should hardly if ever be em-
ployed.

The blisters that arise from Bursa, says
a certain author, should never be opened till
after the inflammation has subsided; but this
is an error very palpable, for if the inflamma-
tion should continue for a considerable length
of time, which in many instances is the
case, and the Serum ~~be~~ allowed to reac-
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remain in the vesicles, it would inevitably ¹⁷
produce a considerable ulceration of the parts
in contact, so that it should always be evacuated
early. Small punctures; not large incisions, should
be made.

The remedies that have been spoken
of are but of small consequence when com-
pared to the ones now about to be recommended.
It is the plan of treatment by Mr. Kentish illus-
trated to, the applications recommended and first
employed by this gentleman, are the following,
viz - Alkohol, the fluid sol. alk: Ether, Spirits of
Turpentine, these so employed as to prevent
heavy evaporation these I believe are the chief
he employed in cases of burns.

The injured surface to which these app-
lications are to be made should be bathed two
or three times over with the rectified spirits of
wine either simple or combined with Cam-
phor or spirits of Turpentine heated by stand-
ing in hot water. The liniment composed
of the common yellow asphaltum softened with
Spirits of turpentine is then to be spread upon
old linen rags and applied over the whole
of the injured surface. The yellow ointment

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Stops the pores of the cloth, impedes evaporation and
thus confines the effect of the Alkohol to the burnt
surface.

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The first dressings are to remain one
four and twenty hours. Mr. Hartshick thinks it
of importance that the injured surface should
be left uncovered as little as possible. It is there-
fore recommended to have plasters ready spread
before removing the old ones, and then only
to take off one piece at a time. —

It will seldom be necessary to repeat the
application of alkohol a second time, or that of
the turpentine either; but if it should be found
necessary, it may be continued till suppuration
has taken place. Then, less stimulating or irrita-
ting remedies will be found best, as the un-
guentum resina flavae, combined with oleum
Camphoratum, instead of the turpentine, and
if this should be found too irritating, you should
employ the cerasatum lapidis calaminariae;
or the unguentum saturninum, made weak.

D. Physick has a very high opinion of the
Balsilicon and spirits of turpentine, and remarks
that in applying it care should be had that it
be only upon the burnt surface; for if it should-

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will ensue, and it is from this circumstance
or consciousness and inclination among physicians,
that they have supposed this remedy as injurious,
and he also says that when properly applied he
always found it effectual. This communication
alone is sufficient to establish the great useful-
ness of the remedy.

But there is a remedy which I would parti-
cularly advise all practitioners to employ, and
which I think to be more important than the
Spirits of turpentine; that is the Tincture of
Cantharides, combined with the unguentum,
resinæ flavæ, instead of the Turpentine. —

Whilst a Student of Medicine, I have
had an opportunity of seeing many cases of
Burns, and several in which this remedy effected
a cure. It is applicable to all cases of Burns
where you would employ the Turpentine; but
from reasoning a priori, we should expect to find
suppression of urine induced; but this I have
never known. It should not be made quite so
strong as that commonly prepared. —

The sores formed by Burns, are, perhaps,
more disposed to form large granulations,
than any others, which rise considerably above
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the surrounding skin, they should in this case, ²⁰ be dressed with any moderately stimulating astringent ointment; as the Sagilicon combined with red precipitate; and if the part will allow of the application of a roller, the prepare will be of immense service in keeping down the granulations and rendering them more healthy. When this method fails, the sore should be gently rubbed with the Argentum Nitratum. —

In cases of separated eschar, and in the furrows formed between rough, and the living parts, Mr. Kentish introduces powdered chalk. Then a plaster is applied, and in very tedious cases a poultice over the whole. —

Powdered chalk is likewise to be employed in repairing the growth of exuberant granulations, before spoken of, and also to ablate the redundant secretion. —

Burnt pastes, which are contiguous, are very apt to grow together in the progress of the cure, as the fingers, toes, eyelids, and nose of the nostrils. In order to prevent this, the dressings should always be kept between them, until the cure is completely performed. —

In case the fingers are burnt, says

— Dr. Physick.

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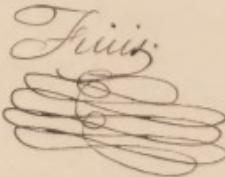
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health.

Dr. Physick, the dressings should be applied
between them; they are then to be extended upon
a Splint; this is also applicable ^{to} burns, on the
fore-arm or leg. —

Burns in the neck are frequently fol-
lowed by such a contraction of the cicatrix, that
the head becomes drawn to one side. This de-
formity may be lessened, tho' it cannot always
be prevented by position. —

I have not discussed or descended very
minutely into the treatment of Burns; for
in all cases, the method of cure must vary
with the different existing circumstances.

With this, preceptors in Medicine, State
my leave; wishing a continuation of your
health, happiness, and useful labours. —

Friiij.


Wm. Thun

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